Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 31th December, 2023
Time of Issue: 1345 hours IST

Subject: 1) Dense to very dense fog likely to continue over many parts of plains of Northwest & adjoining Central India and likely to further extend to East India during next 2 days and gradually decrease thereafter.
2) Cold Day to Severe Cold Day conditions likely to continue over some parts of Punjab, Haryana, Uttar Pradesh and north Rajasthan during next 2 days.

Realized weather during past 24 hours till 0830 hours IST of today:

- **Minimum temperatures**: The Minimum temperatures are in the range of 6-9°C over most parts of Punjab, Haryana-Chandigarh, north Uttar Pradesh and north Rajasthan and in range of 10-12°C over Delhi, south Rajasthan and north Madhya Pradesh. **These are above normal by 2-4°C** over many parts of Punjab, Haryana-Chandigarh-Delhi, northwest Rajasthan, West Uttar Pradesh, West Madhya Pradesh and Gujarat.
- **Fog: Dense (visibility 50-200 m) to very dense fog (visibility < 50 m) occurred over many parts of Punjab; at a few parts over** Haryana-Chandigarh; at isolated pockets over Uttarakhand, Uttar Pradesh, Bihar, north Rajasthan, north Madhya Pradesh. **Dense fog** occurred over isolated parts of Jammu & Kashmir, Himachal Pradesh, interior Odisha, Chhattisgarh, Jharkhand and southeast Uttarakhand for a few hours in the morning.
- **Visibility Recorded at 0530 hours IST (≤200 meters): Assam:** Jorhat-0; **Punjab:** Pathankot & Bhatinda-0 each, Patiala-50, Chandigarh-50, Amritsar-200; **Jammu & Kashmir:** Jammu-0; **Uttar Pradesh:** Agra-0, Jhansi-50; **Haryana:** Ambala-25, Hissar-200; **Rajasthan:** Bikaner-50; **Madhya Pradesh:** Gwalior-50.
- **Visibility Recorded at 0830 hours IST (≤200 meters): Uttar Pradesh**: Jhansi-25; **Madhya Pradesh:** Satna-25; Tikamgarh**,** Khajuraho**,** Damoh-50 each, Gwalior-200; Chandigarh-50; **Rajasthan**: Bikaner-50; **Uttarakhand**: Dehradun-50; **Punjab:** Patiala, Amritsar & Ludhaina-200 each.
- **Cold day to severe cold day conditions** occurred in some parts of Punjab, Haryana and Uttar Pradesh and in isolated pockets over Rajasthan.

Weather Systems and Forecast & Warnings during next 5 days: (graphics in Annexure I).

Weather Systems:

- Yesterday's Low Pressure Area over West Equatorial Indian Ocean & adjoining Southeast Arabian Sea persists over the same region with the associated cyclonic circulation extending upto mid-tropospheric levels at 0830 hours IST of today, 31st December, 2023. It is likely to move west-northwestwards and become Well Marked Low Pressure Area over central parts of south Arabian Sea & adjoining West Equatorial Indian Ocean during next 48 hours.
- The Western Disturbance as a cyclonic circulation now lies over north Haryana & neighbourhood between 1.5 to 3.1 km above mean sea level. However, the trough aloft in middle tropospheric levels at 5.8 km above mean sea level now runs roughly along Long. 74°E to the north of Lat. 30°N.

Dense fog and Cold day warning:

- **Dense to very dense fog conditions very likely to prevail in many parts over Punjab during 31st December 2023 night to 02nd January 2024 morning and in some parts thereafter for subsequent 03 days.**
- **Dense to very dense fog conditions very likely to prevail in some parts over Haryana & Chandigarh and Uttar Pradesh during 31st December 2023 night to 02nd January 2024 morning and in isolated pockets thereafter for subsequent 2-3 days.**
- **Dense to very dense fog conditions** very likely to prevail in isolated pockets over Rajasthan and Uttarakhand during 31st December 2023 night to 02nd January 2024 morning and dense fog in isolated pockets for subsequent 02 days**.**
- **Dense Fog** conditions very likely to prevail in isolated pockets for few hours in early morning/morning hours over Jammu & Kashmir, Himachal Pradesh on 31st December 2023 & 01st January 2024; over Madhya Pradesh, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 31st December, 2023-02nd January, 2024.
- **Cold Day to Severe Cold Day** conditions very likely in some parts over Punjab, Haryana on 31st December and in isolated pockets over Punjab on 01st January 2024.
- **Cold Day** conditions very likely in isolated pockets over Punjab during 02nd January-04th January; over Haryana during 01st-04th January, 2024; over Uttar Pradesh, Rajasthan and Madhya Pradesh during 31st December 2023-01st January 2024.

Rainfall Forecast:

- Under the influence of a fresh easterly wave and the above **Low Pressure Area**; light to moderate rainfall at some places very likely over south Tamil Nadu, south Kerala and Lakshadweep from 31st December, 2023 to 04th January, 2024 with isolated **heavy rainfall** over Lakshadweep on 02nd January, 2024.
- Light isolated rainfall/snowfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; Himachal Pradesh and Uttarakhand on 31st December, 2023.
- Light isolated rainfall very likely over Uttar Pradesh, Madhya Pradesh and Chhattisgarh during 02nd-04th January, 2024.

Temperatures Forecast:

- No significant change in minimum temperatures likely over most parts of north India during next 5 days.

Fishermen Warning in association with the Low Pressure Area over Arabian Sea: (Annexure II)

- **Day 1 (31st December, 2023):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area, adjoining Gulf of Mannar, Southeast Arabian Sea, Lakshadweep & adjoining Maldives area.
- **Day 2 (01st January, 2024):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin Area, Southeast Arabian Sea, Lakshadweep & adjoining Southwest Arabian Sea.
- **Day 3 (02nd January, 2024):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area, adjoining Gulf of Mannar, Southeast Arabian Sea, Lakshadweep & adjoining Southwest Arabian Sea.
- **Day 4 (03rd January, 2024):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area, adjoining Gulf of Mannar, Southeast Arabian Sea & adjoining Southwest Arabian Sea.
- **Day 5 (04th January, 2024):** Squally weather with wind speed 40-45 kmph gusting to 55 kmph likely to prevail over Comorin area adjoining Gulf of Mannar, Southeast Arabian Sea, Lakshadweep, Eastcentral & adjoining Westcentral and Southwest Arabian Sea.

For more details kindly refer: https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

Impact expected due to dense to very dense fog in the night/morning hours over Punjab, Haryana, Chandigarh during next 5 days, over Uttar Pradesh during next 4 days, over north Rajasthan during next 2 days.

- **Transport and Aviation:**
  - May affect some airports, highways and railway routes in the areas of met- sub-division.
  - Difficult driving conditions with slower journey times.
  - Unless taken precautionary measures, it may lead to some road traffic collisions.
- **Power Sector:**
  - Chances of Tripping of Power lines in the very dense fog routes.
- **Human Health:**
  - Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
  - Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
  - Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

Action suggested:

- **Transport and Aviation:**
  - Be careful while driving or outing through any transport.
  - Use fog lights during driving.
  - Be in touch with airlines, railways and state transport for schedule of your journey.
- **Power Sector:**
  - To keep ready Maintenance Team
  - Human Health: To avoid outing until unless emergency and to cover the face.

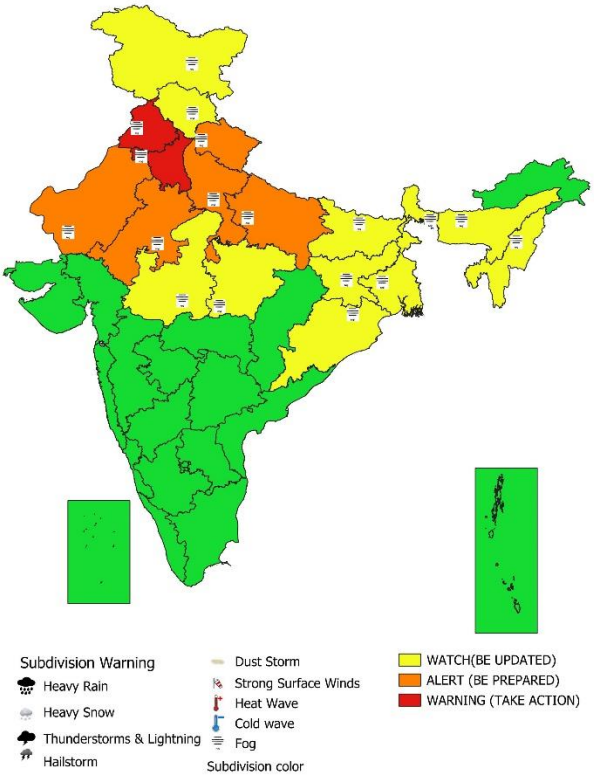
Impact expected due to Cold Day/Severe Cold day conditions in some parts over of Punjab and Haryana & Chandigarh during next 2 days.

- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

Action suggested:

- Wear several layers of loose fitting, light weight; warm woolen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth.
- Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- Avoid or limit outdoor activities.
- Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- If the affected skin area turns black, immediately consult a doctor.
- Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- Take safety measures while using electrical and gas heating devices.
- Extreme care needed for vulnerable people.
- Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- Protect livestock from cold weather.

SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
31-12-2023

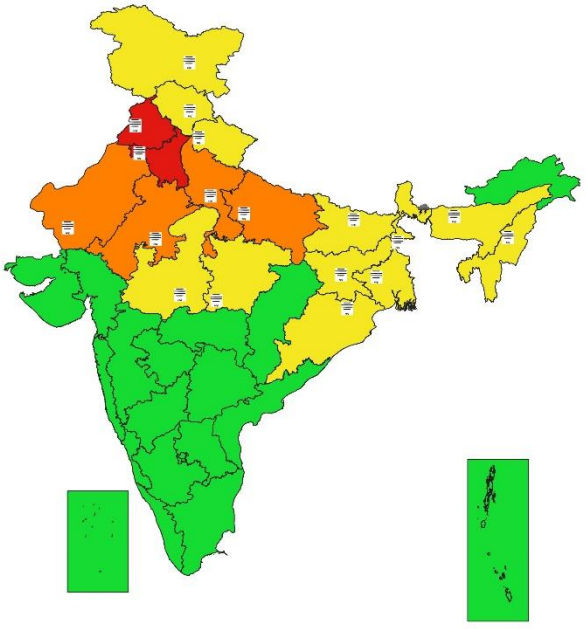


Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm

Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog

Subdivision color
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)

SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
01-01-2024

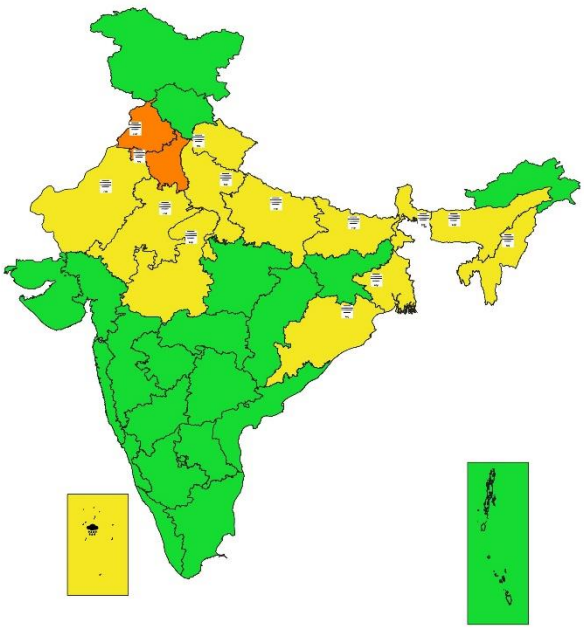


Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm

Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog

Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)

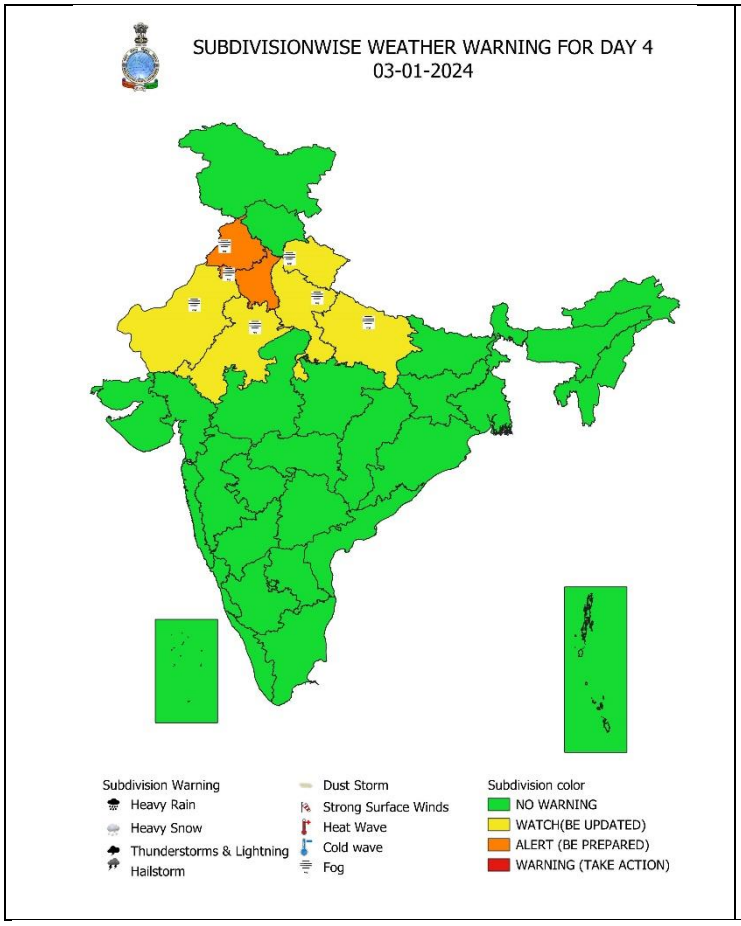
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
02-01-2024

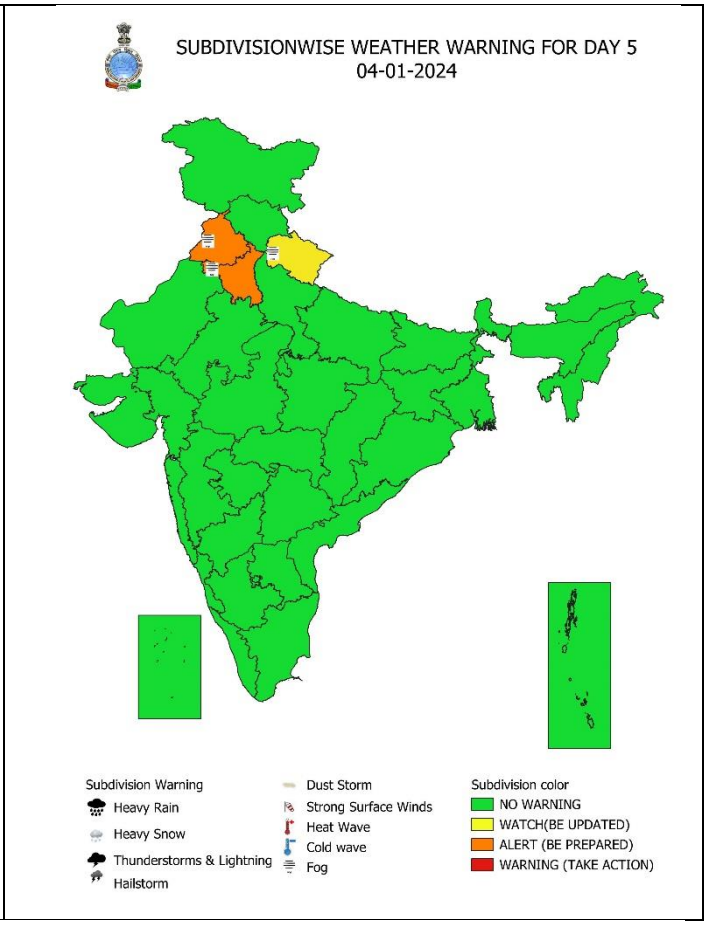


Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm

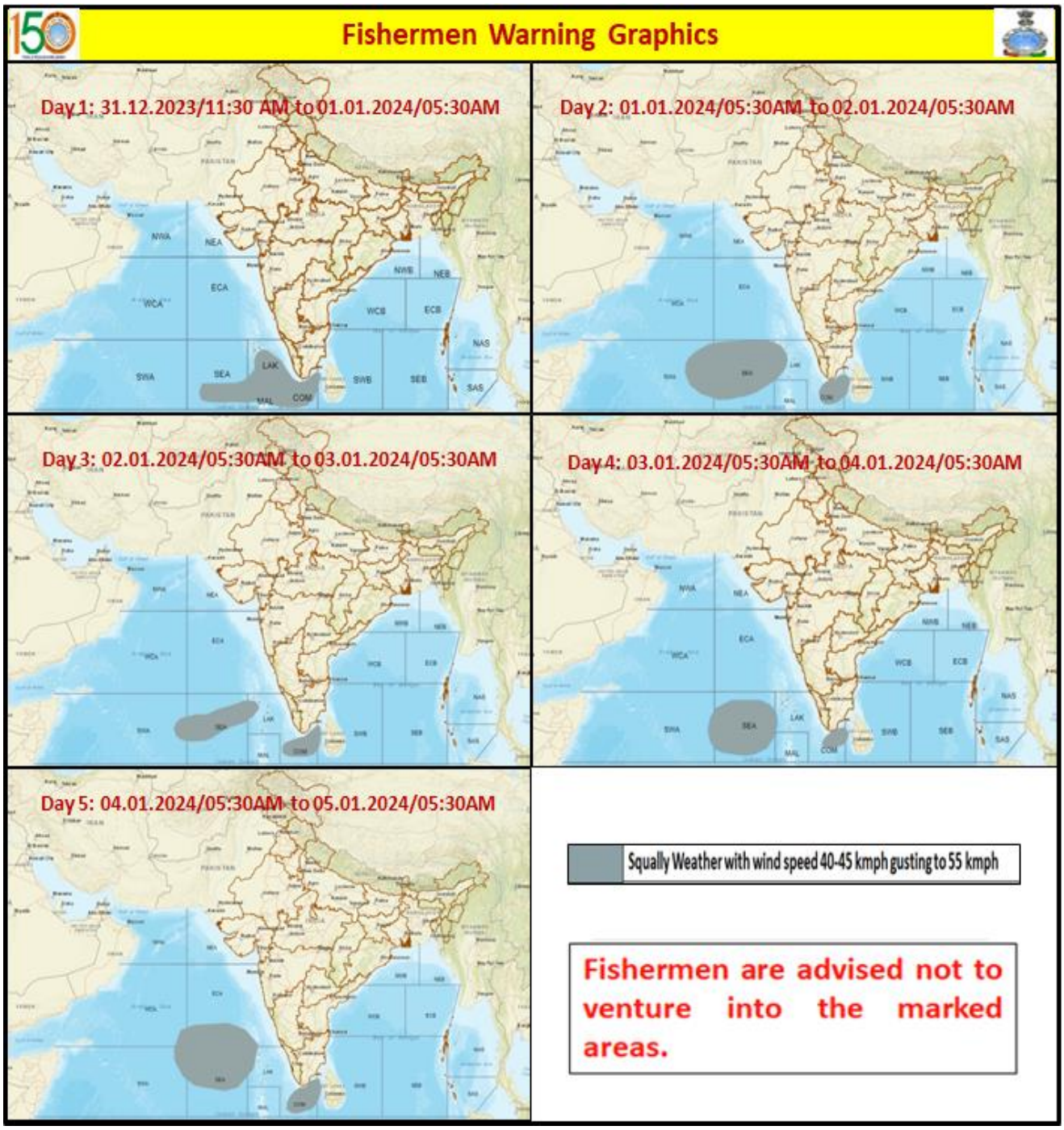
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog

Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
03-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 5
04-01-2024
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)

Annexure II


Fishermen Warning Graphics
Day 1: 31.12.2023/11:30 AM to 01.01.2024/05:30AM
Day 2: 01.01.2024/05:30AM to 02.01.2024/05:30AM
Day 3: 02.01.2024/05:30AM to 03.01.2024/05:30AM
Day 4: 03.01.2024/05:30AM to 04.01.2024/05:30AM
Day 5: 04.01.2024/05:30AM to 05.01.2024/05:30AM
Squally Weather with wind speed 40-45 kmph gusting to 55 kmph
Fishermen are advised not to venture into the marked areas.

Legends:

- **Heavy Rain:** 64.5 to 115.5 mm; **Very Heavy Rain:** 115.6 to 204.4 mm; **Extremely Heavy Rain:** >204.4mm.
- **Obsy:** Observatory; **AWS:** Automatic Weather Station; **dist:** District: **NH:** National Highway; **KVK**: Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation
- **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathwada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

Subdivision Warning		Subdivision color
Heavy Rain	Dust Storm	NO WARNING
Heavy Snow	Strong Surface Winds	WATCH(BE UPDATED)
Thunderstorms & Lightning	Heat Wave	ALERT (BE PREPARED)
Hailstorm	Cold wave	WARNING (TAKE ACTION)
	Fog	

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

Flash Flood Risk
High Risk (Take Action)
Moderate Risk (Be Prepared)
Low Risk (Be Updated)

Definition of Cold wave, Cold Day and Fog Conditions:

Cold Wave

When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5 °C to -6.4 °C.
Severe Cold Wave: Minimum Temperature Departure from normal ≤ -6.5 °C

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is ≤ 4.0 °C
Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C

(c) For Coastal Stations

When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C

Cold Day

When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions

Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C.
Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility < 1km

Moderate Fog: When the visibility between 500-200 metres
Dense Fog: when the visibility between 50- 200 metres
Very Dense Fog: when the visibility < 50 metres